What is claimed is:

1. A camera comprising:

a first frame member having on an inner surface thereof a female helicoid and a cam groove having substantially a same lead angle as a lead angle of the female helicoid, said cam groove being deeper than the female helicoid; and

a second frame member which is placed inside the first frame member and which includes a male helicoid engaged with the female helicoid, and a cam follower engaged with the cam groove;

wherein the first frame member is rotatable relative to the second frame member, so as to cause one of forward and backward movement of the second frame member.

2. A camera according to Claim 1, wherein:

a clearance formed by engagement between the cam groove and the cam follower is larger than each clearance formed by engagement between the male helicoid and the female helicoids;

the forward and backward movement of the second frame member due to rotation of the first frame member is produced by the engagement between the female helicoid and the male helicoids; and

when an external force is applied to the second frame

member, the engagement between the cam follower and the cam groove prevents the second frame member from being detached from the first frame member.

3. A camera according to Claim 1, wherein:

the cam follower is arranged on top of a thread of the male helicoid formed on the second frame member, said thread being wider and lower than other threads.

4. A camera comprising:

a first frame member having on an inner surface thereof at least a first area in which a cam groove is formed, and at least a second area in which a segment of a female helicoid is formed, said female helicoid having substantially a same lead angle as a lead angle of the cam groove and having a groove depth shallower than a groove depth of the cam groove; and

a second frame member having cam follower which is engaged with the cam groove and a male helicoid which is engaged with the female helicoids;

wherein the first frame member is rotatable relative to the second frame member, so as to cause one of forward and backward movement of the second frame member.

5. A camera according to Claim 4, wherein:

a plurality of first areas and a plurality of second areas are alternately arranged in a circumferential direction of the first frame member, and each first area and each second area are formed in each of at least three places.

6. A camera according to Claim 4, wherein:

a boundary between the first area and the second area is formed substantially parallel to a lead of the cam groove, and a width of the second area in a direction perpendicular to the lead of the cam groove is larger than a width of the first area.

7. A camera according to Claim 4, wherein:

the cam follower is arranged on top of a thread of the male helicoid formed on the second frame member, said thread being wider and lower than other threads.

8. A camera according to Claim 4, wherein:

a clearance formed by engagement between the cam groove and the cam follower is larger than each clearance formed by engagement between the male helicoid and the female helicoids;

the forward and backward movement of the second frame member due to rotation of the first frame member is produced

by the engagement between the female helicoid and the male helicoids; and

when an external force is applied to the second frame member, the engagement between the cam follower and the cam groove prevents the second frame member from being detached from the first frame member.

9. A camera comprising:

a first frame member having on an inner surface thereof a female helicoid, first cam grooves each of which has substantially a same lead angle as a lead angle of the female helicoid and each of which is deeper than the female helicoid, and second cam grooves each of which has a lead angle different from the lead angle of the female helicoid and each of which is deeper than the female helicoid;

a second frame member having a male helicoid which is engaged with the female helicoid and first cam followers which are engaged with the first cam grooves; and

a third frame member having second cam followers which are engaged with the second cam grooves;

wherein the first frame member is rotatable relative to the second and third frame members, so as to cause the second and third frame members to be moved relative to the first frame member.

10. A camera according to Claim 9, wherein:

each of the first cam grooves and each of the second cam grooves are formed in a circumferential direction of the first frame member in each of at least three places.

11. A camera according to Claim 10, wherein:

a clearance formed by engagement between each first cam groove and each first cam follower is larger than each clearance formed by engagement between the male helicoid and the female helicoids;

forward and backward movement of the second frame member due to rotation of the first frame member is produced by the engagement between the female helicoid and the male helicoids; and

when an external force is applied to the second frame member, the engagement between the first cam followers and the first cam grooves prevents the second frame member from being detached from the first frame member.

12. A camera according to Claim 10, wherein:

each of the first cam followers is arranged on top of a thread of the male helicoid formed on the second frame member, said thread being wider and lower than other threads.

13. A camera according to Claim 9, wherein:

the first cam grooves and the second cam grooves have substantially a same depth.

14. A camera comprising:

a first frame member having on an inner surface thereof first areas, in each of which a first cam groove is formed, and second areas, in each of which a segment of a female helicoid and a second cam groove are formed, said female helicoid having substantially a same lead angle as a lead angle of the first cam groove, and said second cam groove having a lead angle different from the lead angle of the first cam groove;

a second frame member having cam followers which are engaged with the respective first cam grooves and a male helicoid which is engaged with the female helicoid; and

a third frame member having second cam followers which are engaged with the respective second cam grooves;

wherein each first cam groove is deeper than the female helicoid.

15. A camera according to Claim 14, wherein:

a boundary between each first area and each second area is formed substantially parallel to a lead of each first cam groove, and a width of each second area in a direction

perpendicular to the lead of each first cam groove is larger than a width of each first area.

16. A camera according to Claim 14, wherein:

a clearance formed by engagement between each first cam groove and each first cam follower is larger than each clearance formed by engagement between the male helicoid and the female helicoids;

forward and backward movement of the second frame member due to rotation of the first frame member is produced by the engagement between the female helicoid and the male helicoids; and

when an external force is applied to the second frame member, the engagement between the first cam followers and the first cam grooves prevents the second frame member from being detached from the first frame member.

17. A camera according to Claim 16, wherein:

a boundary between each first area and each second area is formed substantially parallel to a lead of each first cam groove, and a width of each second area in a direction perpendicular to the lead of each first cam groove is larger than a width of each first area.

18. A camera according to Claim 14, wherein:

each of the second cam grooves is formed on a surface of a root of the female helicoid.

19. A camera according to Claim 14, wherein:

the first areas and the second areas are alternately formed in a circumferential direction of the first frame member, and each first area and each second area are formed in each of at least three places.

20. A camera according to Claim 14, wherein:

the first cam grooves and the second cam grooves have substantially a same depth.

21. A camera comprising:

a first frame wherein a first female helicoid is formed on the first region on the inner circumference face thereof, and a second female helicoid is formed with the same lead as the first female helicoid and a different groove depth from that of the first female helicoid on the second region in the inner circumference face thereof, and

a second frame disposed inside of the first frame, wherein a first male helicoid which spirally meshes with the first female helicoid, and a second male helicoid which spirally meshes with the second female helicoids, are formed

on the outer circumference thereof;

wherein the second frame is relatively rotated with respect to the first frame so as to be linearly moved.

22. A camera according to Claim 21, further comprising:

Cam grooves formed on the second region of the first frame; and

a third frame having cam followers for engaging the cam grooves;

wherein the first frame is relatively rotated with respect to the second frame and the third frame so that the second frame and the third frame are relatively moved with respect to the first frame along the optical axis direction.

23. A camera according to Claim 22, wherein the cam groove is formed on substantially the same face as the bottom face of the second female helicoid in the thickness direction of the first frame, and the bottom face of the cam groove is substantially the same as the bottom face of the first female helicoid.

24. A camera according to Claim 21, wherein a plurality of the first regions and the second regions are each provided.

25. A camera according to Claim 24, wherein the first regions and the second regions are alternately disposed along the circumference direction of the first frame.

26. A camera according to Claim 25, wherein three each of the first regions and the second regions are provided.

27. A camera according to Claim 21, wherein the width of the first region is narrower than that of the second region in the circumference direction.

28. A camera according to Claim 21, further comprising:

a straight guide member supported so as to be relatively immovable with respect to the first frame along the optical direction and be rotationally moved on the optical axis;

a first engaging tab provided to the straight guide member;

a guide portion provided to the first frame for guiding the first engaging tab so as to move relatively and rotationally on the optical axis with respect to the first frame;

a first tab inserting portion provided to one end portion of the first frame for inserting the first engaging

tab into the guide portion; and

a helicoid inserting portion provided to one end portion of the first frame for the first male helicoid spirally to mesh with the first female helicoid;

wherein the first tab inserting portion is formed on the helicoid inserting portion.

29. A camera according to Claim 28, further comprising:

a second engaging tab which is provided to the straight guide member, and is guided by the guide portion; and

a second tab inserting portion provided to one end portion of the first frame for inserting the second engaging tab into the guide portion;

wherein the second engaging tab is disposed at a position distanced by a predetermined distance with respect to the first engaging tab in the circumference direction, and in the event that one of the first engaging tab and the second engaging tab is positioned at a position corresponding to the helicoid inserting portion in the circumference direction, the other is positioned at a position other than the helicoid inserting portion.

30. A camera according to Claim 29, wherein each of the first tab inserting portion, the second tab inserting

portion, and the helicoid inserting portion, each consist of groove portions formed on one end portion of the first frame.

31. A camera according to Claim 30, wherein the groove depths of the first tab inserting portion and the second tab inserting portion are greater than the groove depth of the helicoid inserting portion.

32. A camera according to Claim 30, wherein the groove widths of the first tab inserting portion and the second tab inserting portion are narrower than the groove width of the helicoid inserting portion in the circumference direction.

33. A camera comprising:

a first frame wherein a first female helicoid is formed on the first region on the inner circumference face thereof, and a second female helicoid is formed with the same lead as the first female helicoid and a different groove depth from that of the first female helicoid on the second region; and

a second frame disposed inside of the first frame, wherein a first male helicoid which spirally meshes with the first female helicoid, and a second male helicoid which spirally meshes with the second female helicoids, are formed on the outer circumference thereof;

wherein the top portion of the thread of the second

helicoid is formed on substantially the same face as the top portion of the thread of the first female helicoid in the thickness direction of the first frame, and the second female helicoid is formed with a thread depth less than that of the first female helicoid.

34. A camera according to Claim 33, further comprising:

a cam groove formed on the second region of the first frame; and

a third frame having a cam follower for engaging the cam groove;

wherein the first frame is relatively rotated with respect to the second frame and the third frame so that each of the second frame and the third frame are relatively moved with respect to the first frame in the optical axis direction.

35. A camera according to Claim 34, wherein the cam groove is formed on substantially the same face as the bottom face of the second female helicoid in the thickness direction of the first frame, and the bottom face of the cam groove is substantially the same face as the bottom face of the first female helicoid.

36. A camera according to Claim 33, wherein a plurality of the first regions and the second regions are each provided.

37. A camera according to Claim 36, wherein the first regions and the second regions are alternately disposed along the circumference direction of the first frame.

38. A camera according to Claim 37, wherein three each of the first regions and the second regions are provided.

39. A camera according to Claim 33, wherein the width of the first region is narrower than that of the second region in the circumference direction.

40. A camera according to Claim 33, further comprising:

a straight guide member supported so as to be relatively immovable with respect to the first frame along the optical direction and be rotationally moved on the optical axis;

a first engaging tab provided to the straight guide member;

a guide portion provided to the first frame for guiding the first engaging tab so as to move relatively and

rotationally on the optical axis with respect to the first frame;

a first tab inserting portion provided to one end portion of the first frame for inserting the first engaging tab into the guide portion; and

a helicoid inserting portion provided to one end portion of the first frame for the first male helicoid spirally meshing with the first female helicoid;

wherein the first tab inserting portion is formed on the helicoid inserting portion.

41. A camera according to Claim 40, further comprising:

a second engaging tab which is provided to the straight guide member, and is guided by the guide member; and

a second tab inserting portion provided to one end portion of the first frame for inserting the second engaging tab into the guide portion;

wherein the second engaging tab is disposed at a position distanced by a predetermined distance with respect to the first engaging tab in the circumference direction, and in the event that one of the first engaging tab and the second engaging tab is positioned at a position corresponding to the helicoid inserting portion in the circumference direction, the other is positioned at a

position other than the helicoid inserting portion.

42. A camera according to Claim 41, wherein the first tab inserting portion, the second tab inserting portion, and the helicoid inserting portion, each consist of groove portions formed on one end portion of the first frame.

43. A camera according to Claim 42, wherein the groove depths of the first tab inserting portion and the second tab inserting portion are greater than the groove depth of the helicoid inserting portion.

44. A camera according to Claim 42, wherein the groove widths of the first tab inserting portion and the second tab inserting portion are narrower than the groove width of the helicoid inserting portion in the circumference direction.